

CHAPTER II

REPORTS, PLANS, AND SPECIFICATIONS

A. PROCEDURES FOR WATER SUPPLY PROJECT APPROVAL

The following KDHE review procedure is designed to facilitate the efficient processing of PWSS projects as required by KSA 65-163. Table 1 summarizes the basic steps leading to KDHE approval, especially as they relate to the design engineer. The tasks are common to all water supply projects with a few exceptions. These deviations are identified and discussed following the general procedure for water supply project approval.

1. APPROVAL STEPS

- a. PRELIMINARY REPORT PREPARATION (TASK 1) - The preparation of a preliminary report by the engineer for the client outlines the alternatives that exist for public water supply improvements and extensions. The client uses the report to make an assessment of possible actions and as a basis for directing the engineer to continue the investigation. The items covered in the report are similar to those required for the engineer's report.
- b. ENGINEER'S REPORT PREPARATION AND SUBMISSION (TASK 2) - The engineer's report consists of the details necessary to establish the proposed project design. KDHE approval of the engineer's report is not required but a copy must be submitted so that preparations can be made for the design concepts conference.
- c. DESIGN CONFERENCE (TASK 3) - A meeting is held with KDHE to establish the design concepts to be incorporated in the final design of the PWSS. KDHE is concerned primarily about the functional and sanitary features of the design; hence, the meeting is used to insure that the design engineer understands these requirements for the proposed design. KDHE will notify the engineer in writing about the acceptability of the proposed design.
- d. PLANS AND SPECIFICATION/PERMIT APPLICATION SUBMISSION (TASK 4) - The preparation of plans and specifications by the engineer must be based on the previously approved design approach. Also, KDHE has the authority to require a design revision if new information has developed since the design concepts meeting. Deviations from the engineer's report must be identified and substantiated. The plans and specification must be submitted to KDHE along with a notarized Public Water Supply Permit

Application signed by the mayor, RWD board chairman, city manager, or an official of the PWSS authorized to do business for the PWSS. The information in the permit application may be taken from the engineer's report or the plans and specifications. KDHE approval of the plans and specifications and the permit application may require several weeks after the required submittals, depending on the complexity of the project.

The project engineer must be cognizant of the need to submit plans, specifications, or other documentation to agencies or organizations other than KDHE. For example, KSA 82a-621 requires plans, specifications, proposed operating budget and other specified documentation relating to the design and operation of a new rural water district must be filed with the chief engineer of DWR.

- e. INITIATION OF CONSTRUCTION (TASK 5) - After KDHE approves the plans and specifications and the permit application, bids can be solicited and the construction contract let. Delays in the initiation of construction over 2 years after approval will require resubmittal of the P&S and permit application.
- f. NOTIFICATION, INSPECTION, AND APPROVAL (TASK 6) - As soon as the functional and sanitary capabilities of the water system are constructed and operational, the engineer must notify KDHE by letter so that a post construction inspection can be made. If the construction is found to be in accord with the approved plans and specifications, KDHE will issue a permit to the public supplier and inform the engineer of the project's final approval.

TABLE 1

OUTLINE OF PUBLIC WATER SUPPLY PROJECT (GENERAL) PROCEDURE

Task No.	Engineer's Task Description	Timing For Engineer	Action Required By KDHE	Timing For KDHE
1	Preparation of preliminary report	None	None	None
2	Preparation and submission of engineer's report	Within 1 year after completion of Task #1	Comments optional	None
3	Design concepts conference involving engineer and KDHE	None	Approval in writing	ASAP after meeting
4	Preparation and submission of plans and specifications	Within 1 year after completion of Task #3	Approval in writing of P/S, P/A, and for initiation of construction procedure	ASAP after submission
5	Initiation of construction steps	Within 2 years after completion of Task #4	None	None
6	Notification of completion by engineer	ASAP after completion of construction	Post construction inspection and issuance of permit	ASAP after notification ASAP after inspection

2. SCOPE OF REVIEW - Task 3 in obtaining approval of a public water supply project identifies KDHE's primary design concerns as the functional and sanitary features. This means that the engineer's report and plans/specifications will be reviewed in these areas. "Functional" refers to the ability of a design to provide the required water quantity and accomplish the desired water quality changes. "Sanitary" concerns reflect the public and operator health aspects of the proposed design.
3. DEVIATIONS/MODIFICATIONS TO KDHE STANDARD APPROVAL PROCEDURE
 - a. WATER MAIN EXTENSIONS - Tasks 1 through 3 of Table 1 will not be required for water main extensions unless specifically directed by KDHE or otherwise required by the funding source for the project. Water main extensions will not receive a post construction inspection by KDHE. Further, a water supply permit will not be issued for water main extensions less than 1 mile in total length and permit applications need not be completed for such projects. However, preparation and submission of plans and specifications are required for all water main extensions.
 - b. MINOR ADDITIONS/MODIFICATIONS TO PROCESSES - Tasks 1 through 3 of Table 1 will not be required for minor additions or modifications to treatment processes unless specifically directed by KDHE or otherwise required by the funding source for the project. The engineer should contact the Chief of Plans and Permits of the Public Water Supply Section, KDHE, for specific clarification on whether an engineering report is necessary. It is anticipated that in lieu of Task 3, a teleconference will be sufficient for most projects if KDHE has questions or comments concerning a project.
 - c. NEW WELLS - Tasks 1 through 3 of Table 1 will not be required for new well construction unless specifically directed by KDHE or otherwise required by the funding source for this project. However, additional information must be submitted which is described in part B.,3 of this chapter including documentation of the absence of pollution sources and water quality sampling results. This material shall be submitted along with the plans and specifications and permit application as discussed in Task 4. KDHE approval is required before new well construction can begin.

B. DOCUMENTATION REQUIREMENTS FOR WATER SUPPLY PROJECT APPROVAL

Tasks 1, 2, and part of 4 of the approval procedure consist of the preparation of a preliminary report, an engineer's report, and plans and specification. Task 1 and 2 serve different purposes but share similar coverage since a comprehensive view of the water supply situation is required. Task 4 uses the information derived in the report preparation steps to allow the completion of the project plans and specifications (and also the Public Water Supply Permit Application). The following listings summarize the information generally necessary to establish the proposed design (preliminary and engineer's reports) and the specific requirements (plans and specifications) for its construction. Detailed design information for these outlined items are presented in Chapter V.

1. PRELIMINARY AND ENGINEER'S REPORTS - The preliminary report (Task 1) is preliminary in that it is the client's first formal look at the project alternatives as proposed by the engineer. It differs from the engineer's report (Task 2) in its limited detail and the still tentative recommendations. The engineer's report represents the final assessment of the water supply project alternatives prior to seeking approval from KDHE.

This report includes a detailed review of the existing water situation along with the data and considerations used to establish the proposed design. Alternative proposals are compared so that the relative merits of each are apparent. Cost analyses are made to justify the proposed design and include estimates of the capital and O&M costs along with the recommended method of financing. Recommended coverage for the preliminary and engineer's reports includes the various topics reviewed in the design guidelines and standards section; especially the items discussed in Chapter V.

2. PLANS AND SPECIFICATIONS (GENERAL) - The inclusion of all pertinent construction information must be contained in the plans and/or the specifications. The following outline summarizes the recommended location for such information where applicable. Another accepted format is the system proposed by the Construction Specifications Institute where a standardized format is used to facilitate the preparation and review of plans and specifications.

a. PLANS AND GENERAL REQUIREMENTS

- 1) Suitable title
- 2) Scale
- 3) North point
- 4) Datum used
- 5) Name of legal entity or responsible person
- 6) Area of entity to be served
- 7) Name and address of design engineer
- 8) Imprint and date of placement of engineers seal
- 9) Legible prints suitable for reproduction

b. PLANS-PROJECT DESIGN REQUIREMENTS

- 1) Summary of major facilities proposed sizes and design criteria.
- 2) Summary of existing facilities sizes and known design criteria and yield.
- 3) Location and nature of existing facilities affecting or having a relationship to the proposed improvements.
- 4) Boundaries of area to be served.
- 5) Relative locations of existing and proposed:
 - a) Water mains length and sizes
 - b) Sewers and drains with sizes relative to water main locations.
 - c) Other sources of pollution.
 - d) Chemical feeding equipment and points of application.
 - e) Sampling taps.

- 6) Locations, dimensions, and elevations of proposed facilities.
 - 7) Schematic flow diagrams and hydraulic profiles through plant.
 - 8) Piping details for plant flow schemes.
 - 9) Known flood elevations relative to facilities.
 - 10) Topography and arrangement of facilities.
 - 11) Stream crossings with bed elevations and water profiles for low, normal, and flood flows.
 - 12) Drawings for well construction.
 - 13) Description of features or facilities not covered by specifications.
- c. SPECIFICATIONS - Complete and detailed specifications shall be supplied for the proposed project including:
- 1) A program for keeping existing water works facilities in operation during construction.
 - 2) Laboratory facilities and equipment.
 - 3) The number and design of chemical feeding equipment.
 - 4) Materials or proprietary equipment for sanitary or other facilities including any necessary backflow or back-siphonage protection.

3. DOCUMENTATION REQUIREMENTS FOR NEW WELLS

The following documentation, in addition to a public water supply permit application, should be provided for all new wells:

- a. LOCATION DETAILS - A plan or sketch showing the location of the proposed water supply well with respect to roads, houses, wells, and potential sources of pollution such as sewer lines, privies, cesspools, septic tanks, lateral fields, animal

feedlots, and underground storage tanks or pipes for petroleum products or chemicals. In addition, the location of the test well(s) which were relied on in locating and designing the proposed water supply well should be clearly indicated on the drawing.

- b. WELL DETAILS - A plan or sketch showing the type of well construction to be used. Items to be shown include: depth and diameter of the drill hole, type of material, diameter, weight and thickness of the casing, the well screen, the gravel pack, the thickness and depth of the grout, the extension of the well casing above the existing ground level, the 100 year flood level or the highest known flood level at the well location, the well vent, the drawdown gauge, the discharge line including the meter, the check and gate valves, the pump motor and pedestal for a vertical turbine installation, the sanitary well seal in the case of above ground discharge for a submersible turbine pump, or the pitless unit in the case of below ground discharge for a submersible pump, the chlorination equipment, point of chlorine application, the sampling tap, and the well house. In addition, the lithologic log(s) and formation sampling results from the test well(s) which were relied on in locating and designing the proposed water supply well should be submitted to KDHE along with any hydrologic data from preliminary pump tests.
- c. WATER LINE DETAILS - A sketch showing the connection of the water line from the proposed well to the distribution system. In addition, provide details of the pipe diameter, material, depth of burial, details of trenching and backfilling, specifications for the separation of the water line from pollution sources, and pressure testing and disinfection procedures to be used in the construction of the water line.
- d. DOCUMENTATION OF ABSENCE OF POLLUTION SOURCES - Documentation by easement or letter that no potential sources of pollution will be allowed within 100 feet (30 m) of the well as described more fully in Chapter IV.

- e. WATER SAMPLING - Analytical results of water samples collected from the aquifer in which the well is to be completed as described in part B.4. of this chapter and Appendix B.

4. WATER SAMPLING REQUIREMENTS FOR NEW SOURCES (SURFACE WATERS AND WELLS)

KAR 28-15-16(e) requires new water supply sources be sampled and analyzed for certain chemical and radiological constituents. Required analytical parameters for monitoring new sources are presented in Appendix B along with recommended sampling procedures. Analytical results must be submitted to KDHE in addition to the plans, specifications, and permit application before final approval will be granted.

